

TENT COOPERATION TREA

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
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From the INTERNATIONAL BUREAU

To:

SIMS, Anthony, W.
29 Clarence Street
Private Bag 3140
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NOUVELLE-ZÉLANDE

Date of mailing (day/month/year) 03 March 2000 (03.03.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 30520/14-X055	
International application No. PCT/NZ99/00121	International filing date (day/month/year) 28 July 1999 (28.07.99)

1. The following indications appeared on record concerning:		
<input checked="" type="checkbox"/> the applicant	<input checked="" type="checkbox"/> the inventor	<input type="checkbox"/> the agent <input type="checkbox"/> the common representative
Name and Address WAKELIN, Noel, Roger 10 Shadelands Lane Mount Maunganui 3002 New Zealand	State of Nationality NZ	State of Residence NZ
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:		
<input type="checkbox"/> the person	<input type="checkbox"/> the name	<input checked="" type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence
Name and Address WAKELIN, Noel, Roger 147 Oceanview Road Mount Maunganui 3002 New Zealand	State of Nationality NZ	State of Residence NZ
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3. Further observations, if necessary:		
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PATENT COOPERATION TREATY

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NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
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Date of mailing (day/month/year) 31 March 2000 (31.03.00)	
International application No. PCT/NZ99/00121	Applicant's or agent's file reference 30520/14-X055
International filing date (day/month/year) 28 July 1999 (28.07.99)	Priority date (day/month/year) 28 July 1998 (28.07.98)
Applicant WAKELIN, Noel, Roger	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

25 February 2000 (25.02.00)

☐ in a notice effecting later election filed with the International Bureau on:
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/NZ 99/00121

A. CLASSIFICATION OF SUBJECT MATTER		
Int Cl ⁶ : B25D 17/04 B25G1/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) IPC: B25C1/00, 1/18 B25D17/04 B25G21/00		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU: IPC as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPAT: HANDLE: OR TRIGGER		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 153 193 A (URBANOWICZ) 8 May 1979 entire document	1-15
X	US 5 295 620 A (COUSINEAU ET AL) 22 March 1994 column 3 line 50 - column 4 line 3	1-3,7, 13
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>* Special categories of cited documents:</p> <p>"A" Document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p> </div> </div>		
Date of the actual completion of the international search 22 October 1999		Date of mailing of the international search report <div style="text-align: center; font-size: 1.2em;">- 9 NOV 1999</div>
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No.: (02) 6285 3929		Authorized officer D.G. FRY Telephone No.: (02) 6283 2130

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NZ 99/00121

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	AU 25614/71 A (454083) (HILTI AG) 24 August 1972 pages 4, 5	1
X	US 2 367 003 A (CARSON) 9 September 1942 pages 1, 2	1, 4

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/NZ 99/00121

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

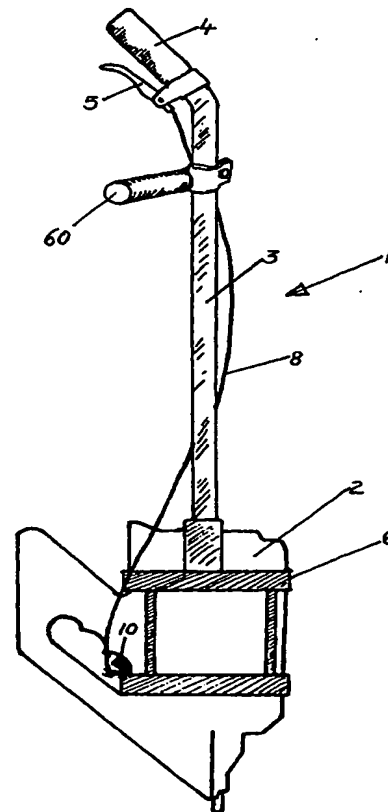
Patent Document Cited in Search Report		Patent Family Member	
US	4 153 193	AU	45608/79
		BR	7902385
		CA	1095201
		MX	146476
US	5 295 620	AU	51470/93
		CA	2107751
		US	5295620
		WO	94/08758
DE	2012908	BE	763592
		CA	932502
		FR	2083364
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		US	3767099

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : B25D 17/04, B25G 1/00	A1	(11) International Publication Number: WO 00/06343 (43) International Publication Date: 10 February 2000 (10.02.00)
(21) International Application Number: PCT/NZ99/00121 (22) International Filing Date: 28 July 1999 (28.07.99) (30) Priority Data: 330859 ✓ 28 July 1998 (28.07.98) NZ (71)(72) Applicant and Inventor: WAKELIN, Noel, Roger [NZ/NZ]; 10 Shadelands Lane, Mount Maunganui 3002 (NZ). (74) Agents: SIMS, Anthony, W. et al.; 29 Clarence Street, Private Bag 3140, Hamilton 2001 (NZ).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>With amended claims.</i>

(54) Title: HANDLE FOR TRIGGER OPERATED TOOL**(57) Abstract**

A handle (1) for attaching to a trigger operated hand tool (2) characterised in that the handle includes: a shaft (3) adapted so as to be attachable at one end thereof to the hand tool, a hand grip (4) located at the other end of the shaft, a trigger activator (5) positioned near the hand grip capable of being operatively connected to the trigger (10) associated with the hand tool.



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HANDLE FOR TRIGGER OPERATED TOOL

TECHNICAL FIELD

The present invention relates to a handle for use with trigger operated hand tools.

5 BACKGROUND ART

In particular, the present invention relates to a handle for use with nail guns. However, this should not be seen as limiting as it is envisaged that the handle of the present invention may be applied to other trigger operated hand tools.

- 10 For ease of reference only, the trigger operated hand tool will now simply be referred to as a nail gun.

Currently, due to a persons arm only having a limited reach, use of a nail gun to secure an object to another object often requires an operator to bend down or alternatively use a ladder or such like to effect securement.

- 15 Examples of such activities may include the use of a nail gun to secure a floor to a joist, or a sheet of plasterboard such as GIBBOARD™ to purlins. As should be appreciated, the need to bend down or use ladders and such like, can unnecessarily increase the time taken to use a nail gun to secure an object. In addition, having to bend down so as to secure a floor to a joint
20 can often lead to operators of nail guns suffering from back strain.

It is an object of the present invention to address the foregoing problems or at least to provide the public with a useful choice.

Further aspects and advantages of the present invention will become

apparent from the ensuing description which is given by way of example only.

DISCLOSURE OF INVENTION

According to one aspect of the present invention there is provided a handle
5 for attaching to a trigger operated hand tool characterised in that the handle includes:

- a shaft adapted so as to be attachable at one end thereof to the hand tool,
- a hand grip located at the other end of the shaft,
- 10 - a trigger activator positioned near the hand grip capable of being operatively connected to the trigger associated with the hand tool.

It is envisaged that the trigger operated hand tool may be any one of a variety of hand tools without departing from the scope of the present invention.

15 In general, the trigger operated hand tool may be motorised.

The trigger of the hand tool will generally be in the form of a lever arrangement which is configured to allow for operation of the hand tool. However, this should not be seen as limiting the scope of the present invention.

20 In preferred embodiments the trigger operated hand tool may be a nail gun.

For ease of reference only, the trigger operated hand tool will now simply be referred to as a nail gun.

It is envisaged that the length of the shaft may vary.

In general, the length of the shaft will be dependent on the reach of the average user. Typically, the length of the shaft may be substantially 50cm – 70cm. However, this should not be seen as necessarily limiting the scope
5 of the present invention.

It is envisaged that there may be a variety of different ways of adapting one end of the shaft so it can be attachable to a nail gun.

In preferred embodiments, the shaft may be adapted to include a clamp at one end thereof which is capable of holding a nail gun.

10 The hand grip may come in a variety of different forms without departing from the scope of the present invention.

In general, the hand grip may be angled with respect to the longitudinal axis of the shaft to allow for it to be easily gripped by a persons hand.

In preferred embodiment the handle may include a second hand grip
15 positioned on the shaft at a point intermediate the two ends of the shaft.

In some further preferred embodiments, a second hand grip may also be provided, the second hand grip being adapted so as to be capable of having its position altered on the shaft of the handle.

In general, the second hand grip may include a collar adapted so as to
20 either fix the handle in place, in a set position on the shaft, or alternatively allow the handle to move along the length of the shaft. This may usually be achieved, by using a collar which includes an open neck which can be closed or opened via tightening or loosening a bolt, or nut bolt combination. The effect of tightening or loosening the bolt, or nut and bolt combination,

being to effectively increase or decrease the internal diameter of the collar.

It is envisaged the trigger activator may come in a variety of different forms without departing from the scope of the present invention.

In some embodiments, the trigger activator may be in the form of a button
5 or switch.

In preferred embodiments the trigger activator may be in the form of a lever.

It is envisaged that the trigger activator may be operatively connected to the trigger of the nail gun in a variety of different ways without departing
10 from the scope of the present invention.

In embodiments where the trigger activator may be in the form of a button or switch, the trigger activator may be electrically connected to the trigger mechanism of the hand tool. In an alternative aspect the trigger activator may be electrically connected to an electrical device configured to be
15 capable of operating the trigger associated with the hand tool.

In preferred embodiments, the trigger activator may be a first lever operatively connected to the trigger associated with the nail gun via a cable. The cable being attached at one end thereof to the first lever such that pivoting of the first lever causes the relative length of the cable to
20 increase or decrease to control activation of the trigger associated with the nail gun.

In general this may be achieved by the opposite end of the cable being connected to a second lever pivoted via the relative shortening or lengthening of the cable, to control activation of the trigger. However, it is

envisaged other cable arrangements may be employed without departing from the scope of the present invention.

Thus, preferred embodiments of the present invention may have a number of advantages over the prior art which can include:

- 5 1. Allowing an operator to effectively increase the reach of their arm. As a result bending down or using ladders and such like may not be required when using a nail gun to secure an object to another object.
2. Decreasing the time taken to use a nail gun to secure an object to another object - for example, a floor board to a joist.
- 10 3. The handle is lightweight and can be cheaply manufactured.
4. The handle can easily be fitted to any nail gun.

BRIEF DESCRIPTION OF DRAWINGS

Further aspects of the present invention will become apparent from the following description which is given by way of example only and with
15 reference to the accompanying drawings in which:

- Figure 1 is a side view of one preferred embodiment of the present invention, and
- Figure 2 is a partial view of the clamp showing a perspective view thereof, and
- 20 Figure 3 is a diagrammatic top plan view illustrating how the trigger activator is operatively connected to the trigger of a nail gun, and

Figure 4 is a diagrammatic top plan view of a second handle in accordance with a further aspect of the present invention, and

Figure 5 is a plan view of a skewer shown in Figure 2.

BEST MODES FOR CARRYING OUT THE INVENTION

- 5 With respect to the drawings there is provided a handle 1 which is attached to a PASLODE™ cylindereed powered nail gun 2. The handle 1 includes a shaft 3 which has a hand grip 4 located at one end thereof. Positioned substantially adjacent to the hand grip 4 is an activator lever 5. The handle 1 a second hand grip 60.
- 10 The other end of the shaft 3 has a clamp 6 which attaches the handle 1 to the nail gun 2. The clamp 6 includes an upright element 15 and cross members 11 and 12 as shown clearly in Figure 2. Cross members 11 and 12 are U-shaped when viewed from above and have an aperture 70, 71 near the end of one U-shaped arm 11, 12 and a slot 72, 73 near the other end of
- 15 the U-shaped arm.

The nail gun 2 may be secured to or removed from the clamp 6 by means of skewers 22, 23. Skewers 22, 23 consist of a bolt element 26, 27 being threaded at one end so as to engage a nut 20, 21. The other end of the bolt element 26, 27 has or can include a lock 28, 29. This is shown most clearly

20 in Figures 2 and 5. To remove nail gun 2 from the clamp 6 simply involves releasing the cam lock portion 28, 29 so that the nut ends of skewers 22 or 23 may be slid out of slots 72, 73 and moved outwardly in the general direction of arrow 80. To assist in this movement apertures 70, 71 should be a loose fit about bolt elements 26, 27.

25 To secure nail gun 2 to the clamp 6 is simply the reverse of the removal

process. To ensure the nail gun is safely secured within the clamp 6 may however involve some adjustment of the nuts 20, 21 to ensure that the cam locks 28, 29 can operate effectively to clamp skewers 22, 23 and their respective slots 72, 73.

- 5 The activator lever 5 is associated with a bowden cable 8 which has its other terminal end attached to a trigger lever 50 shown in Figure 3. The trigger lever 50 is attached to the clamp 6 by means of two struts of which only the top strut 51 is shown. The trigger lever 50 is able to pivot about fulcrum 52 as the length of the bowden cable 8 is relatively increased or
10 decreased via activation of lever 5.

Shortening of the bowden cable 8 in the direction indicated by arrow 60 causes the trigger lever 50 to depress trigger 10 of the nail gun 2. Once a nail has been fired return spring 54 helps return the trigger lever 50 to the position shown so as to release the trigger 10. Substantially,
15 contemporaneously with this occurring the bowden cable 8 should effectively lengthen (once lever 5 is released by the operator) so that the trigger lever 50 can return to the position shown in Figure 3.

With respect to Figure 4 there is shown the second hand grip 60 having a handle portion 61 and a collar portion 62. The collar portion includes a
20 neck 63 including two outwardly directed flanges 64, 65 having apertures 67, 68. The apertures are bridged via a bolt 66. The thread of the bolt 66 engages with a corresponding inner thread in aperture 67. Consequently, tightening the bolt (i.e. generally by turning in a clockwise direction) causes the two flanges of the neck 64, 65 to move towards one another so as
25 to effectively decrease the internal diameter of the collar 62. Correspondingly, loosening the bolt 66 (i.e. generally by turning in a anti-

clockwise direction) causes the two flanges of the neck to move away from one another effectively increasing the internal diameter of the collar 62. Thus, by this means the hand grip 60 can be slid along the length of shaft 3, to a desired position wherein the second handle grip 60 is fixed in place
5 by tightening the bolt 66.

Aspects of the present invention have been described by way of example only and it should be appreciated that modifications and additions may be made thereto without departing from the scope of the appended claims.

WHAT I CLAIM IS:

1. A handle for attaching to a trigger operated hand tool characterised in that the handle includes:
 - a shaft adapted so as to be attachable at one end thereof to the hand tool,
 - a hand grip located at the other end of the shaft,
 - a trigger activator positioned near the hand grip capable of being operatively connected to the trigger associated with the hand tool.
2. A handle as claimed in claim 1 wherein the trigger operated hand tool is motorised.
3. A handle as claimed in claim 1 wherein the trigger operated hand tool is a nail gun.
4. A handle as claimed in claim 1 wherein the length of the shaft is substantially 50cm to 70cm.
5. A handle as claimed in claim 1 wherein the shaft includes a clamp at one end thereof capable of holding a nail gun.
6. A handle as claimed in claim 1 wherein the hand grip is angled with respect to the longitudinal axis of the shaft to allow for it to be easily gripped by a persons hand.
7. A handle as claimed in claim 1 wherein the trigger activator is in the form of a button or switch.

8. A handle as claimed in claim 1 wherein the trigger activator is in the form of a lever.
9. A handle as claimed in claim 7 wherein the trigger activator is electrically connected to the trigger mechanism of the hand tool.
10. A handle as claimed in claim 7 wherein the trigger activator is electrically connected to an electric device configured to be capable of operating the trigger associated with the hand tool.
11. A handle as claimed in claim 8 wherein one end of a cable is connected to the lever such that pivoting of the lever causes the relative length of the cable to increase or decrease to control activation of the trigger associated with the nail gun.
12. A handle as claimed in claim 11 wherein the cable is attached at its opposite end to a second lever which is pivoted via the relative shortening or lengthening of the cable, to control activation of the trigger.
13. A handle as claimed in claim 1 wherein the handle includes a second hand grip positioned on the shaft at a point intermediate the two ends of the shaft.
14. A handle as claimed in claim 13 wherein the second handle is adapted so that the position of the second handle on the shaft can be altered.
15. A handle substantially as described herein with reference to any example and/or drawing thereof.

AMENDED CLAIMS

[received by the International Bureau on 21 December 1999(21.12.99);
original claim 1 amended; claim 6 cancelled; remaining claims
unchanged but renumbered as claims 2-14 (2pages)]

1. A handle for attaching to a trigger operated hand tool wherein the handle includes:
 - a shaft adapted so as to be attachable at one end thereof to the hand tool,
 - a hand grip located at the other end of the shaft,
 - a trigger activator positioned near the hand grip capable of being operatively connected to the trigger associated with the hand tool;

the handle characterised in that the hand grip is angled with respect to the longitudinal axis of the shaft to allow the handle to be easily gripped by a persons hand.
2. A handle as claimed in claim 1 wherein the trigger operated hand tool is motorised.
3. A handle as claimed in claim 1 wherein the trigger operated hand tool is a nail gun.
4. A handle as claimed in claim 1 wherein the length of the shaft is substantially 50cm to 70cm.
5. A handle as claimed in claim 1 wherein the shaft includes a clamp at one end thereof capable of holding a nail gun.
6. A handle as claimed in claim 1 wherein the trigger activator is in the form of a button or switch.

7. A handle as claimed in claim 1 wherein the trigger activator is in the form of a lever.
8. A handle as claimed in claim 7 wherein the trigger activator is electrically connected to the trigger mechanism of the hand tool.
9. A handle as claimed in claim 7 wherein the trigger activator is electrically connected to an electric device configured to be capable of operating the trigger associated with the hand tool.
10. A handle as claimed in claim 8 wherein one end of a cable is connected to the lever such that pivoting of the lever causes the relative length of the cable to increase or decrease to control activation of the trigger associated with the nail gun.
11. A handle as claimed in claim 11 wherein the cable is attached at its opposite end to a second lever which is pivoted via the relative shortening or lengthening of the cable, to control activation of the trigger.
12. A handle as claimed in claim 1 wherein the handle includes a second hand grip positioned on the shaft at a point intermediate the two ends of the shaft.
13. A handle as claimed in claim 13 wherein the second handle is adapted so that the position of the second handle on the shaft can be altered.
14. A handle substantially as described herein with reference to any example and/or drawing thereof.

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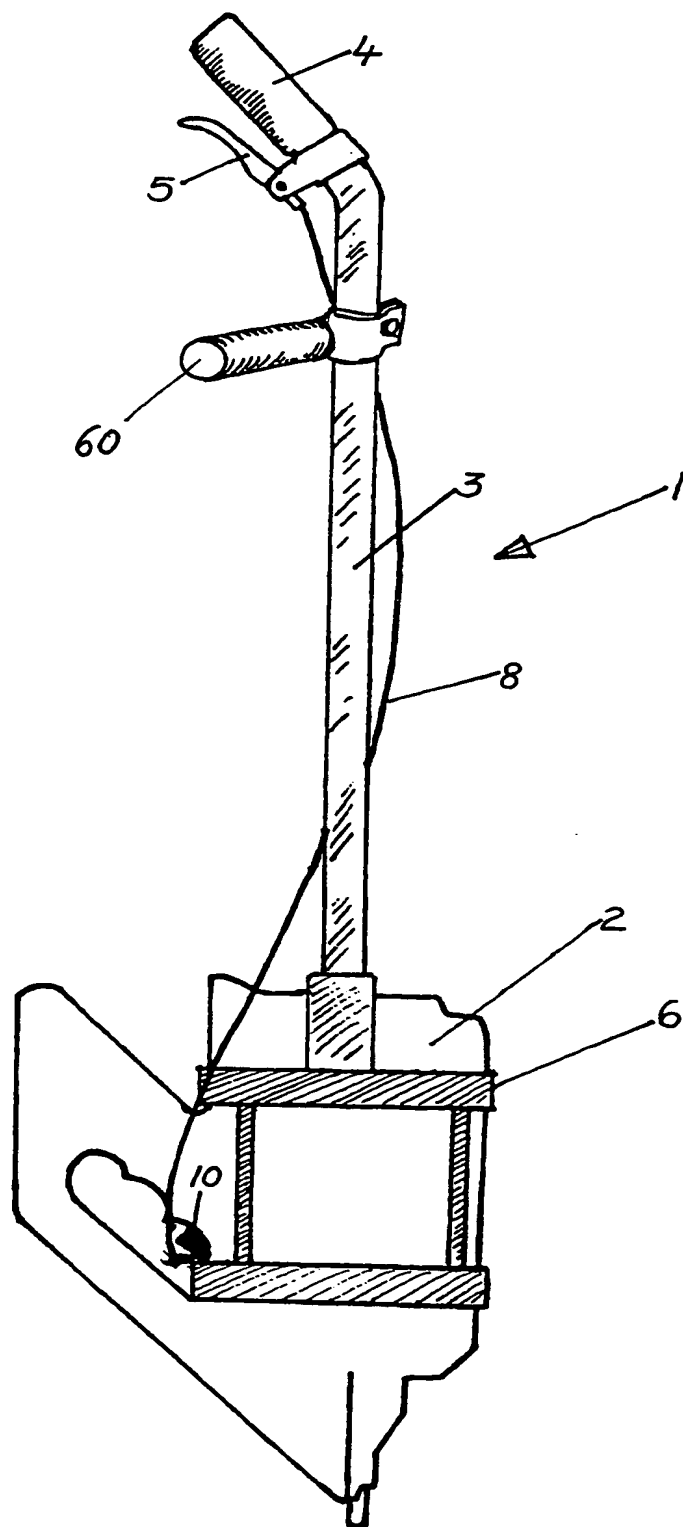
FIGURE 1

FIGURE 2

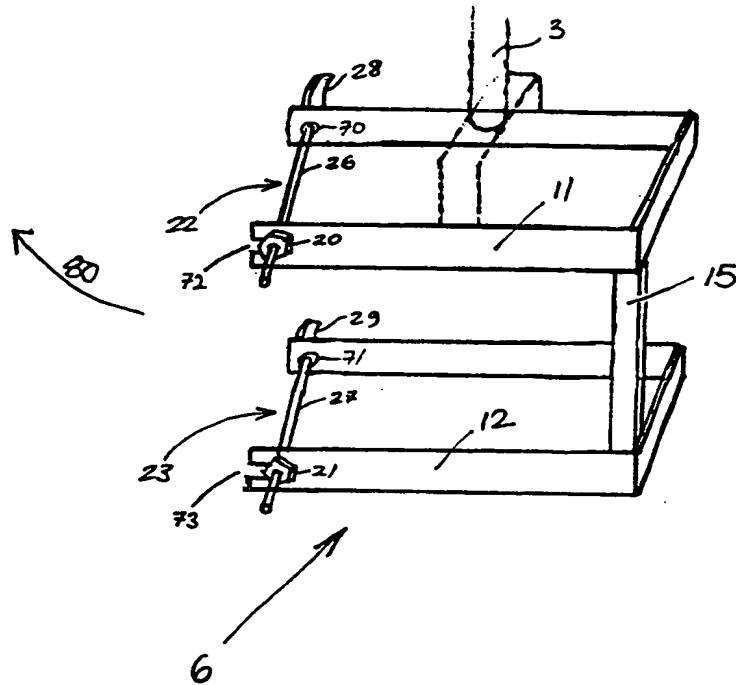


FIGURE 5

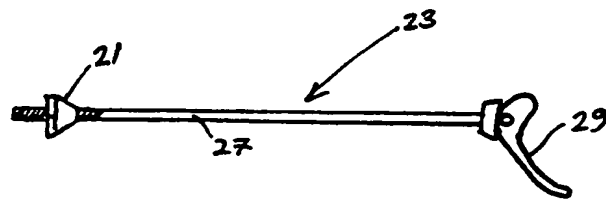


FIGURE 3

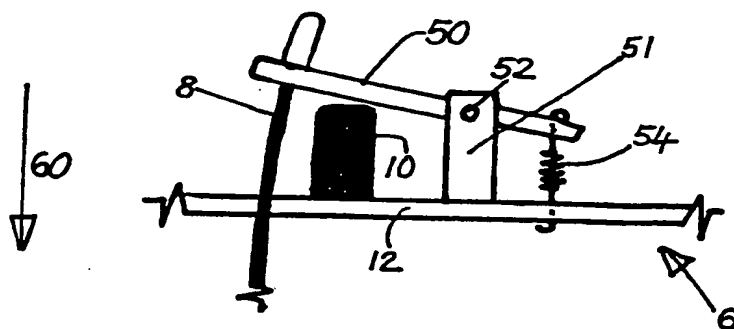
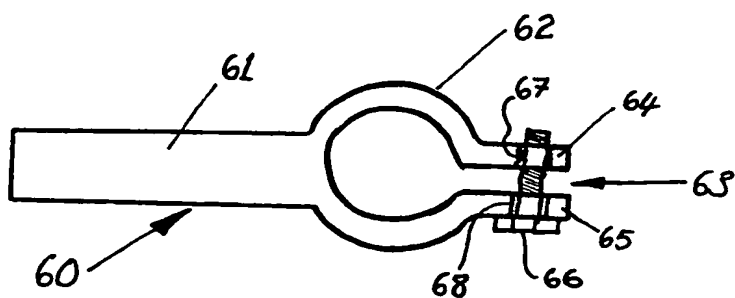


FIGURE 4



INTERNATIONAL SEARCH REPORT

International application No.
PCT/NZ 99/00121

A. CLASSIFICATION OF SUBJECT MATTER					
Int Cl ⁶ : B25D 17/04 B25G1/00					
According to International Patent Classification (IPC) or to both national classification and IPC					
B. FIELDS SEARCHED					
Minimum documentation searched (classification system followed by classification symbols) IPC: B25C1/00, 1/18 B25D17/04 B25G21/00					
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C. DOCUMENTS CONSIDERED TO BE RELEVANT					
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.			
X	US 4 153 193 A (URBANOWICZ) 8 May 1979 entire document	1-15			
X	US 5 295 620 A (COUSINEAU ET AL) 22 March 1994 column 3 line 50 - column 4 line 3	1-3,7, 13			
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex					
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;"> <p>* Special categories of cited documents:</p> <p>"A" Document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </td> <td style="width: 33%; vertical-align: top;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p> </td> <td style="width: 33%;"></td> </tr> </table>			<p>* Special categories of cited documents:</p> <p>"A" Document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>	
<p>* Special categories of cited documents:</p> <p>"A" Document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>				
Date of the actual completion of the international search 22 October 1999		Date of mailing of the international search report <div style="text-align: center; font-size: 1.2em;">- 9 NOV 1999</div>			
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No.: (02) 6285 3929		Authorized officer D.G. FRY Telephone No.: (02) 6283 2130			

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NZ 99/00121

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	AU 25614/71 A (454083) (HILTI AG) 24 August 1972 pages 4, 5	1
X	US 2 367 003 A (CARSON) 9 September 1942 pages 1, 2	1, 4

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/NZ 99/00121

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member	
US	4 153 193	AU	45608/79
		BR	7902385
		CA	1095201
		MX	146476
US	5 295 620	AU	51470/93
		CA	2107751
		US	5295620
		WO	94/08758
DE	2012908	BE	763592
		CA	932502
		FR	2083364
		GB	1314505
		US	3767099

REPLACED BY
PCT 34 AMEND

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

16

REC'D 05 JUN 2000
WIPO PCT

Applicant's or agent's file reference 30520/14-X055	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International application No. PCT/NZ 99/00121	International filing date (<i>day/month/year</i>) 28 July 1999	Priority Date (<i>day/month/year</i>) 28 July 1998
International Patent Classification (IPC) or national classification and IPC Int. Cl.⁷ B25D 17/04, B25G 1/00		
Applicant WAKELIN, Noel Roger		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of 3 sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of 2 sheet(s).
3.	This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 25 February 2000	Date of completion of the report 23 May 2000
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer D.G. FRY Telephone No. (02) 6283 2130

I. Basis of the report1. With regard to the **elements** of the international application:*

- ☐ the international application as originally filed.
- ☒ the description, pages **1-8**, as originally filed,
pages , filed with the demand,
pages , received on with the letter of .
- ☒ the claims, pages , as originally filed,
pages **9-10**, as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages , received on with the letter of .
- ☒ the drawings, pages **1-3**, as originally filed,
pages , filed with the demand,
pages , received on with the letter of .
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of .

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, was on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 1-14	YES
	Claims	NO
Inventive step (IS)	Claims 1-14	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-14	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)**NOVELTY (N)****INVENTIVE STEP (IS)**

US 4153193 A (URBANOWICZ) 8 May 1979

US 5295620 A (COUSINEAU ET AL) 22 March 1994

AU 25614/71 A (HILTI AKTIEN BESELLSCHAFT) 24 August 1972

These documents disclose the provision of a handle attachable to a trigger operated hand tool. There is no disclosure of a hand grip angled with respect to the longitudinal axis of the shaft. This allows an operator to hold the hand grip without angling of the wrist thus avoiding wrist strain. The trigger activator located near the handgrip provides a similar advantage. Hence the invention set out in the claims of this application satisfies the requirements for novelty and inventive step

INDUSTRIAL APPLICABILITY (IA)

The invention set out in the claims of this application satisfies the requirements for this criteria.

WHAT I CLAIM IS:

1. A handle for attaching to a trigger operated hand tool characterised in that the handle includes:
 - a shaft adapted so as to be attachable at one end thereof to the hand tool,
 - a hand grip located at the other end of the shaft,
 - a trigger activator positioned near the hand grip capable of being operatively connected to the trigger associated with the hand tool.
2. A handle as claimed in claim 1 wherein the trigger operated hand tool is motorised.
3. A handle as claimed in claim 1 wherein the trigger operated hand tool is a nail gun.
4. A handle as claimed in claim 1 wherein the length of the shaft is substantially 50cm to 70cm.
5. A handle as claimed in claim 1 wherein the shaft includes a clamp at one end thereof capable of holding a nail gun.
6. A handle as claimed in claim 1 wherein the hand grip is angled with respect to the longitudinal axis of the shaft to allow for it to be easily gripped by a persons hand.
7. A handle as claimed in claim 1 wherein the trigger activator is in the form of a button or switch.

8. A handle as claimed in claim 1 wherein the trigger activator is in the form of a lever.
9. A handle as claimed in claim 7 wherein the trigger activator is electrically connected to the trigger mechanism of the hand tool.
10. A handle as claimed in claim 7 wherein the trigger activator is electrically connected to an electric device configured to be capable of operating the trigger associated with the hand tool.
11. A handle as claimed in claim 8 wherein one end of a cable is connected to the lever such that pivoting of the lever causes the relative length of the cable to increase or decrease to control activation of the trigger associated with the nail gun.
12. A handle as claimed in claim 11 wherein the cable is attached at its opposite end to a second lever which is pivoted via the relative shortening or lengthening of the cable, to control activation of the trigger.
13. A handle as claimed in claim 1 wherein the handle includes a second hand grip positioned on the shaft at a point intermediate the two ends of the shaft.
14. A handle as claimed in claim 13 wherein the second handle is adapted so that the position of the second handle on the shaft can be altered.
15. A handle substantially as described herein with reference to any example and/or drawing thereof.

WHAT I CLAIM IS:

1. A handle for attaching to a trigger operated hand tool wherein the handle includes:

- a shaft adapted so as to be attachable at one end thereof to the hand tool,
- a hand grip located at the other end of the shaft,
- a trigger activator positioned near the hand grip capable of being operatively connected to the trigger associated with the hand tool;

the handle characterised in that the hand grip is angled with respect to the longitudinal axis of the shaft to allow the handle to be easily gripped by a persons hand.

2. A handle as claimed in claim 1 wherein the trigger operated hand tool is motorised.
3. A handle as claimed in claim 1 wherein the trigger operated hand tool is a nail gun.
4. A handle as claimed in claim 1 wherein the length of the shaft is substantially 50cm to 70cm.
5. A handle as claimed in claim 1 wherein the shaft includes a clamp at one end thereof capable of holding a nail gun.
6. A handle as claimed in claim 1 wherein the trigger activator is in the form of a button or switch.

7. A handle as claimed in claim 1 wherein the trigger activator is in the form of a lever.
8. A handle as claimed in claim 7 wherein the trigger activator is electrically connected to the trigger mechanism of the hand tool.
9. A handle as claimed in claim 7 wherein the trigger activator is electrically connected to an electric device configured to be capable of operating the trigger associated with the hand tool.
10. A handle as claimed in claim 8 wherein one end of a cable is connected to the lever such that pivoting of the lever causes the relative length of the cable to increase or decrease to control activation of the trigger associated with the nail gun.
11. A handle as claimed in claim 11 wherein the cable is attached at its opposite end to a second lever which is pivoted via the relative shortening or lengthening of the cable, to control activation of the trigger.
12. A handle as claimed in claim 1 wherein the handle includes a second hand grip positioned on the shaft at a point intermediate the two ends of the shaft.
13. A handle as claimed in claim 13 wherein the second handle is adapted so that the position of the second handle on the shaft can be altered.
14. A handle substantially as described herein with reference to any example and/or drawing thereof.